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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,992	09/26/2005	Michael A. Kraemer	5849-US004	8277
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3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
EXAMINER				
SHECHTMAN, SEAN P				
ART UNIT		PAPER NUMBER		
2121				
NOTIFICATION DATE		DELIVERY MODE		
06/02/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
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Office Action Summary

Application No.

10/550,992

Applicant(s)

KRAEMER ET AL.

Examiner

Sean P. Shechtman

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
- Paper No(s)/Mail Date 6/21/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 6/21/06 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the data processing device for performing the method according to claim 1, said data processing device comprising: (a) An input device for the data; (b) a central unit connected to the input device, wherein said central unit runs a program for the processing of the data according to the method of claim 1; and (c) an output device for the warning signal connected to the central unit; the data processing device according to claim 12, wherein an input device for changing the data and an output device for displaying the data are connected to the central unit; a computer program adapted to perform the process according to claim 1; a computer program which, when it is run in a computer, performs the process according to claim 1; a computer program comprising commands that

perform the process according to claim 1; a computer program which implements the process according to claim 1; and a data carrier on which a computer program according to any of claims 14-17 is stored; must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract

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on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it does not avoid the form and legal phraseology often used in patent claims, such as "means" and "said,".

Correction is required. See MPEP § 608.01(b).

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

5. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Referring to page 4, lines 12-14, the phrase "may also be made it easier for the user" is not clear.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-9, 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-9, 11-18 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph. The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

Claim 1 recites the limitation "the position of the prosthesis inside the mouth" in c. There is insufficient antecedent basis for this limitation in the claim. It will be assumed to be a position of the prosthesis inside a mouth.

Claim 3 recites the limitation "the minimal cross-sectional area" in line 2. There is insufficient antecedent basis for this limitation in the claim. It will be assumed to be a minimal cross-sectional area.

Referring to claims 3-5, "it" is not clear.

Claim 5 recites the limitation "the minimal section modulus" in line 2. There is insufficient antecedent basis for this limitation in the claim. It will be assumed to be a minimal section modulus.

Claim 6 recites the limitation " the finite elements method or the boundary element method " in line 2-3. There is insufficient antecedent basis for this limitation in

the claim. It will be assumed to be a finite elements method or a boundary element method.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 14-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 7-9, 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by BE1011205 to Materialise, supplied by applicant (hereinafter referred to as Materialise).

Referring to claims 1, 11, 14-18, Materialise teaches a method, program running commands, and data carrier for the processing of data regarding the three-dimensional shape of a dental prosthesis, which has at least two prosthesis sections and at least one connector section, said connector section being connected to at least two prosthesis sections and less stable than the two prosthesis sections, said process comprising the steps of: determining a stability parameter and a stability criterion for the connector section; calculating a value for the stability parameter from the data; and checking the connector section to determine whether the calculated value fulfills the stability criterion, and if not, generating a warning signal; wherein the determination of the stability criterion is dependent on at least one prosthesis attribute selected from the group consisting of: the configuration of the prosthesis; the position of the prosthesis inside the mouth; the material or the cross-sectional profile of the connector section; and the type of the prosthesis sections adjoining the connector section. 2. The method according to claim 1, wherein the stability criterion includes a limit to which the calculated value is compared. 3. The method according to claim 1, wherein the minimal cross-sectional area of the connector section is one stability parameter and the stability criterion comprises a lower limit for it. 7. The method according to claim 1, wherein the calculation of the calculated value is started conforming to a given specification. 8. The

method according to claim 1, wherein the calculation of the calculated value is started according to a given time plan. 9. The method according to claim 1, wherein the shape data is modified and the calculation of the calculated value is started when the data are modified. 12. A data processing device for performing the method according to claim 1, said data processing device comprising: (a) An input device for the data; (b) a central unit connected to the input device, wherein said central unit runs a program for the processing of the data according to the method of claim 1; and (c) an output device for the warning signal connected to the central unit. 13. The data processing device according to claim 12, wherein an input device for changing the data and an output device for displaying the data are connected to the central unit (See Materialise and the portions cited in the International Preliminary Report on Patentability, supplied by applicant).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Materialise as applied to claim 1 above, and further in view of "Fixed partial bridge in the lower jaw supported by one implant and one tooth", to Hansson, supplied by applicant (hereinafter referred to as Hansson).

Referring to claims 4-6, Materialise teaches all of the limitations set forth above, however fails to teach the length of the connector section is one stability parameter and the stability criterion comprises an upper limit for it; wherein the minimal section modulus of the connector section is one stability parameter and the stability criterion comprises a lower limit for it; in which the stability parameter is determined by means of the finite elements method or the boundary element method.

However, referring to claims 4-6, Hansson teaches length of the connector section is one stability parameter and the stability criterion comprises an upper limit for it; wherein the minimal section modulus of the connector section is one stability parameter and the stability criterion comprises a lower limit for it; in which the stability parameter is determined by means of the finite elements method or the boundary element method (See Hansson and the portions cited in the International Preliminary Report on Patentability, supplied by applicant).

Materialise and Hansson are analogous art because they are from the same field of endeavor, dental prosthetics.

At time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Materialise with the finite elements methods determined stability parameter and criterion of Hansson.

Since Hansson teaches the finite elements methods determined stability parameter and criterion enables the calculation of the effect of different values of some important parameters, it would be obvious to one of ordinary skill in the art to apply the technique of finite elements methods determined stability parameter and criterion of Hansson, to improve the system of Materialise, for the predictable results of enabling the calculation of the effect of different values of some important parameters.

Conclusion

10. The prior art or art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited to further show the state of the art with respect to determining a stability parameter and a stability criterion for a connector section; calculating a value for the stability parameter from data regarding the three-dimensional shape of a dental prosthesis; and checking the connector section to determine whether the calculated value fulfills the stability criterion, and if not, generating a warning signal.

U.S. Pub. No. 2004/0158342 to Wolf (Page 3, paragraphs 35-38).

The following patents or publications are cited to further show the state of the art with respect to determining a stability parameter dependent on at least one prosthesis attribute selected from the group consisting of: the configuration of the prosthesis; the

position of the prosthesis inside the mouth; the material or the cross-sectional profile of the connector section; and the type of the prosthesis sections adjoining the connector section.

U.S. Pat. No. 6,788,986 to Traber et al (Col. 12, lines 46-67; Col. 11, lines 9-30).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571)272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS

Sean P. Shechtman

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May 26, 2008

/Sean P. Shechtman/

Primary Examiner, Art Unit 2121